

A DIP INTO SPACE

From Our Little Solar System to the Far Starry Limits.

SOME MARVELOUS DISTANCES

The Stellar Universe as We Know It and What It Means in the Matter of Miles to Reach its Boundaries From the Center of Our Own Sun.

It is worth while making an effort to picture to ourselves the vast extent of the starry system in which we reside. Having gained some faint notion of the extent of the lesser solar system, which occupies a small corner of the stellar system, we must work outward from that beginning. Let us take for our unit of measurement the space which separates the earth from the sun and let the 92,000,000 miles of this distance be represented in our minds by a single inch. In proportion the sun itself must be pictured by a tiny ball less than one hundredth part of an inch in diameter, while our earth must be a mere speck less than one ten-thousandth of an inch in diameter. And this little sun and this minute earth must be just an inch asunder.

Following out the same idea, Mercury and Venus, being closer to the sun than we are, have to be less than an inch away from him, while Jupiter will be five inches off, Saturn will be ten inches off, Uranus will be over nineteen inches off, Neptune will be almost thirty inches off. Then the solar system as a whole, leaving only out of the question certain comets which travel farther, will be inclosed in a circle less than two yards in diameter.

The question arises next, What will be the proportionate size of the stellar system on this same scale of measurement? If the solar system is to be comprised with a hoop not two yards across how wide a space should we allow to the surrounding system of stars, "our universe"? How near will be the nearest of outlying stars? And the sun is reckoned to be one inch away from our earth. If Neptune is reckoned to be less than three feet away from the sun, then on the same scale the star which lies closest of all outer stars in the whole universe to us, Alpha Centauri by name, must be reckoned as lying at a distance of about three and a half miles. And between the two—nothing; at least nothing in the shape of a star. An occasional comet may lag slowly along in the darkness, finding its way from one sun system to another, and dark bodies, cooled suns, may possibly float here or there unobserved by us, but of stars radiant with heat and light none is found in that wide area.

Astronomical writers sometimes talk of stars "in the vicinity" of the sun, and this is what is meant by "vicinity." Think of the distances implied. Our whole solar system is first brought down into a small circle two yards across—every inch in those yards standing for more than 90,000,000 miles—and then on every side and above and below is an encompassing void of three and a half miles, every inch of those miles again representing more than 90,000,000 miles. And then we come upon one gleaming star. Only one quite so near. Another star in the sun's "vicinity," known as 41 Cygni, would lie at a distance of seven miles, and the brilliant Sirius would be over ten miles off. Others must be placed at distances of twenty miles, fifty miles, 100 miles. It is easy to stop. That the starry system has limits we do not doubt, but to define those limits is not possible. On such a scale as is given above those limits certainly would not lie within a distance of 100 miles nor of 1,000 miles.

It is believed that some dim stars, barely to be detected, may be 10,000 times as far away as our sun's nearest neighbor, Alpha Centauri, and this at once gives, even on our much reduced scale, a line from the center of 35,000 miles. Suppose that the limits of the stellar system lie somewhere about there. Thirty-five thousand miles each way from the center would mean a diameter for the whole of 70,000 miles. Imagine a starry system 70,000 miles across from side to side, each inch in those miles representing 92,000,000 of real miles, and somewhere in the midst of it our small solar system, just two yards across, separated from all other stars by a wide blank of three or four miles.

That would be stupendous enough. But we have no reason whatever for supposing that the limits of our universe do lie there. The true boundaries of the stellar system may be twice as far, four times as far, ten times as far. We do not even know with certainty that our solar system is placed anywhere near its center, though this seems rather likely. Far off as the boundary reaches in one direction, it may reach much further in another direction.—Chambers' Journal.

An Ant Illusion.
The idea of mutual aid among ants is pronounced by M. Cornetz, a French entomologist, to be an illusion. In his observations, a single ant drags a load rapidly toward the nest, but when others take hold of the object they pull in different directions, and slow progress is made.

The gain of lying is nothing else but not to be trusted any more, nor to be believed when we say the truth.—Sir Walter Scott.

Quality of Humor.
A famous definition of the quality of humor is this: "For this humor is an adjunct divine; it is a value of life; it makes for greater things than clean laughter from the lungs. It is the root of tolerance, the proof of patience; it suffers long and is kind; serves to tune each little life harmony with the world harmony about it; keeps the heart of man sweet, his soul modest. And at the end, when the light thickens and the mesh grows tight, humor can shape the suffering vigils of the sleepless, can soften pain, can brighten the dusky road to death."

Hard to Say.
"If your mother bought four baskets of grapes, the dealer's price being a quarter a basket, how much money would the purchase cost her?" asked the new teacher.
"You never can tell," answered Tommy, who was at the head of the class. "Ma's great at bargaining!"—Ladies' Home Journal.

What He Imagines.
"Is he conceited?"
"I wouldn't put it that way. But I do know that every time he writes a check he imagines that the grocer is going to have it framed and hung up just to show his signature."—Detroit Free Press.

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Bacon..... 12
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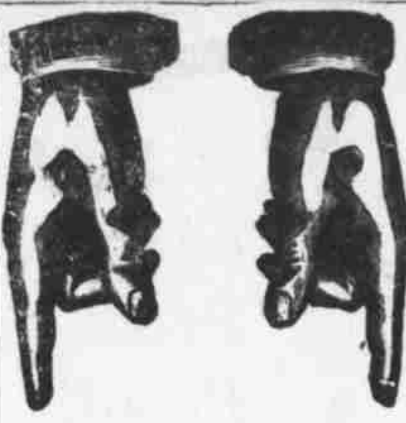
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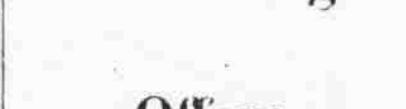
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